WHAT IS CLAIMED IS:

1. A semiconductor laser reducing feedback-induced noise by a modulated optical output, comprising:

an active layer having a light-amplifying region and a saturable absorber region formed to allow said semiconductor laser to be in a bistable state;

an electrode of a first polarity; and

an electrode of a second polarity provided in relation to said electrode of the first polarity, wherein

at least one of said electrode of the first polarity and said electrode of the second polarity is divided to allow a current to be injected independently into said light-amplifying region and said saturable absorber region.

2. The semiconductor laser according to claim 1, wherein

said active layer has two light-amplifying regions formed on lateral sides respectively of said saturable absorber region, and

said two light-amplifying regions have respective emission surfaces of said semiconductor laser.

3. The semiconductor laser according to claim 1, wherein

said current is generated by superimposing a noise current on a modulation current, and

the intensity of said modulation current and the intensity of said noise current are adjusted with respect to each other so as to allow said modulated optical output to have a large amplitude and achieve an effect of reducing the feedback-induced noise.

4. The semiconductor laser according to claim 3, wherein

said modulation current has a rectangular wave.

5. The semiconductor laser according to claim 3, wherein

said noise current has a random intensity change.

6. The semiconductor laser according to claim 3, wherein

a ratio of the length of said saturable absorber region to the entire length of a resonator in the direction of the resonator is at least 1% and at most 50%.

7. The semiconductor laser according to claim 3, wherein

a difference between a maximum value and a minimum value of said noise current is at most an amplitude of said modulation current injected into said light-amplifying region.

8. A semiconductor laser comprising:

a buffer layer formed on a substrate;

a contact layer of a first conductivity type formed on said buffer layer and having a cut formed in said contact layer;

first and second electrodes of the first conductivity type formed on said contact layer of the first conductivity type and separated from each other by said cut;

a cladding layer of the first conductivity type formed on said contact layer of the first conductivity type without being separated by said cut;

an active layer formed on said cladding layer of the first conductivity type;

a cladding layer of the second conductivity type formed on said active layer;

first and second contact layers of the second conductivity type formed on said cladding layer of the second conductivity type separately from each other;

a first electrode of the second conductivity type formed on said first contact layer of the second conductivity type; and

a second electrode of the second conductivity type formed on said second contact layer of the second conductivity type.

9. The semiconductor laser according to claim 8, wherein

said substrate is made of sapphire,

said buffer layer is made of GaN,

said contact layer of the first conductivity type is made of GaN,

said active layer has a multiple quantum well structure formed of an $In_{0.2}Ga_{0.8}N$ quantum well layer and an $In_{0.05}Ga_{0.95}N$ barrier layer, and

said contact layer of the second conductivity type is made of GaN.

10. A semiconductor laser driver driving a semiconductor laser reducing feedback-induced noise by a modulated optical output, comprising:

said semiconductor laser;

a modulation current supply circuit supplying a modulation current to said semiconductor laser; and

a noise current supply circuit supplying a noise current to said semiconductor laser,

said semiconductor laser including

an active layer having a light-amplifying region and a saturable absorber region formed to allow said semiconductor laser to be in a bistable state,

an electrode of a first polarity, and

an electrode of a second polarity provided in relation to said electrode of the first polarity, wherein

at least one of said electrode of the first polarity and said electrode of the second polarity is divided to allow a current to be injected independently into said light-amplifying region and said saturable absorber region.

11. The semiconductor laser driver according to claim 10, wherein

said active layer has two light-amplifying regions formed on lateral sides respectively of said saturable absorber region,

said two light-amplifying regions have respective emission surfaces of said semiconductor laser, and

said semiconductor laser driver further comprises, in order to control light which is output from one of the emission surfaces of said semiconductor laser, a monitor unit monitoring light which is output from the other emission surface of said semiconductor laser.

12. The semiconductor laser driver according to claim 10, wherein said current is generated by superimposing a noise current on a modulation current, and

the intensity of said modulation current and the intensity of said noise current are adjusted with respect to each other so as to allow said modulated optical output to have a large amplitude and achieve an effect of reducing the feedback-induced noise.

13. The semiconductor laser driver according to claim 10, wherein said modulation current has a rectangular wave.

14. The semiconductor laser driver according to claim 10, wherein said noise current has a random intensity change.

15. The semiconductor laser driver according to claim 10, wherein a difference between a maximum value and a minimum value of said noise current is at most an amplitude of said modulation current injected into said light-amplifying region.

16. The semiconductor laser driver according to claim 10, wherein said noise current supply circuit includes

a photoelectric conversion element converting light output from said semiconductor laser into an electric signal,

a high-pass filter extracting only a frequency component higher than a modulation frequency of said modulation current from the electric signal which is output from said photoelectric conversion element, and

a preamplifier adjusting the electric signal having the high-frequency component extracted by said high-pass filter to inject the adjusted electric signal as said noise current into said semiconductor laser.

17. The semiconductor laser driver according to claim 10, further comprising:

a coupling unit coupling said modulation current with said noise

current to inject a resultant current into the light-amplifying region of said semiconductor laser; and

a constant current supply circuit injecting a constant current into the saturable absorber region of said semiconductor laser.

18. A semiconductor-laser driving method for driving a semiconductor laser reducing feedback-induced noise by a modulated optical output, comprising the steps of:

converting light which is output from said semiconductor laser into an electric signal;

extracting, from said electric signal, only a frequency component higher than a modulation frequency of a modulation current to be injected into said semiconductor laser; and

adjusting the electric signal of said extracted high-frequency component to inject, into said semiconductor laser, the adjusted electric signal as noise current to be injected into said semiconductor laser.

19. The semiconductor-laser driving method according to claim 18, wherein

a difference between a maximum value and a minimum value of said noise current is at most an amplitude of said modulation current injected into a light-amplifying region of said semiconductor laser.

20. A semiconductor-laser driving method for driving a semiconductor laser reducing feedback-induced noise by a modulated optical output, comprising the steps of:

coupling a modulation current with a noise current to inject a resultant current into a light-amplifying region of said semiconductor laser; and

injecting a constant current into a saturable absorber region of said semiconductor laser.

21. The semiconductor-laser driving method according to claim 20,

wherein

a difference between a maximum value and a minimum value of said noise current is at most an amplitude of said modulation current injected into said light-amplifying region.